

REMARKS

Corrected Fig. 17 is submitted herewith in response to the Examiner's objection to this figure. The title has also been amended as required.

Claims 1-2 and 6-8 stand rejected under 35 U.S.C. §102(b) as being anticipated by Sasaki (US 6,191,916). Applicants respectfully traverse this rejection, because the cited reference does not disclose (or suggest) the structure of the single pole magnetic head as described in independent claim 1.

Claim 1 now describes a single pole magnetic head including an auxiliary pole, and a main pole having a rear that is magnetically connected to the auxiliary pole and a lower surface opposed to the auxiliary pole. An intermediate magnetic layer extends from the upper surface of the main pole, and a tip magnetic layer extends from the upper surface of the intermediate magnetic layer. The stacked structure of the claimed single pole magnetic head is shown in Fig. 4.

In the stacked structure of the present invention, magnetic flux is generated based on the excitation of the coil circulating through the main pole, the intermediate magnetic layer and the tip magnetic layer in this sequence. During the circulation, the magnetic flux effectively converges toward the medium-opposed surface. The layered structure of the magnetic pole major layer, the intermediate magnetic layer and the tip magnetic layer serves to diminish variation in the sectional area of the path of the magnetic flux in the thin film magnetic head. Saturation of magnetic flux is sufficiently suppressed

irrespective of the reduction in the sectional area. Even when the size (lateral width) of the tip magnetic layer is reduced, the tip magnetic layer allows sufficient leakage of magnetic flux from the front end thereof.

The head disclosed in Sasaki is a so-called ring head which is applied to a magnetic storage device based on in-plane recording. In ring heads, the third magnetic layer 85, the second magnetic layer 79 and the pole chip 72 are stacked in order towards the gap layer 38 and the first magnetic layer 37, which is opposed to the surface of the third magnetic layer 85, as shown in Fig. 36A. Therefore, the stack direction of the layers in Sasaki is opposite to that of the present invention. Thus, Sasaki fails to disclose the stacked structure as defined in claim 1.

Claims 1-4 and 5 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kamijima et al. (US 6,483,664). The structure of the magnetic head shown in Fig. 12A of Kamijima et al. is also a ring head, as in Sasaki. As such, Kamijima et al. also fails to disclose the stacked structure of claim 1.

Claims 1-2 and 6-7 stand rejected under 35 U.S.C. §102(b) as being anticipated by Han et al. (US 6,504,677). The structure of the magnetic head shown in Fig. 2 of Han et al. is also a ring head, as in Sasaki. As such, Han et al. also fails to disclose the stacked structure of claim 1.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kamijima et al. Applicants respectfully traverse this rejection for the reasons given above

with respect to claim 1, from which claim 5 depends, and because of the additional features described in claim 5.

For all of the above reasons, Applicants request reconsideration and allowance of the claimed invention. The Examiner should contact Applicants' undersigned attorney if a telephone conference would expedite prosecution.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By

A handwritten signature in black ink, appearing to read "B. Joe Kim", with a stylized flourish at the end.

B. Joe Kim

Registration No. 41,895

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Suite 2500
300 South Wacker Drive
Chicago, Illinois 60606
(312) 360-0080
Customer No. 24978

In the Drawings:

The attached sheets of drawings includes changes to Fig. 17.

Attachments: (1) Replacement Sheet
(1) Annotated Sheet

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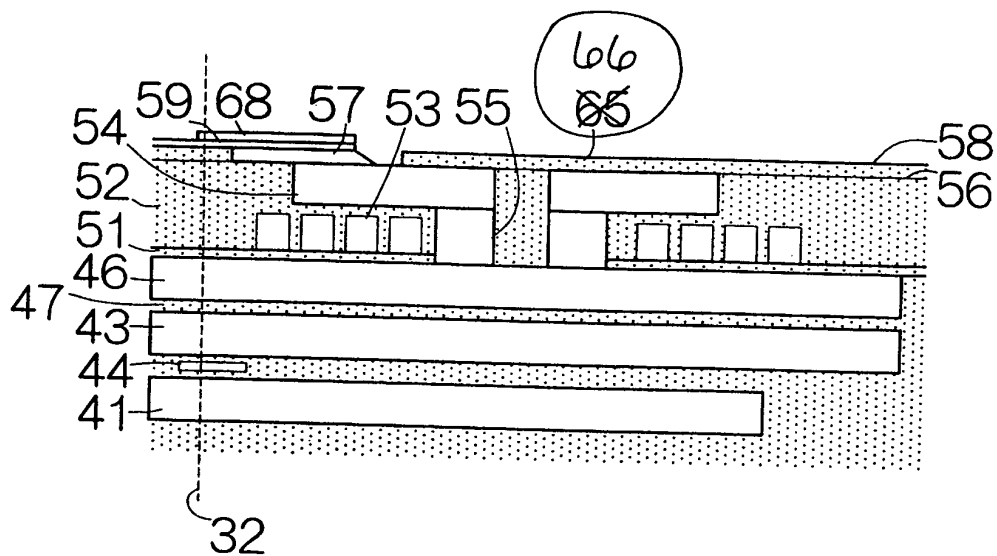


FIG.17